

Applicant's or agent's file reference 12245MET/MAS:sst	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/AU03/00318	International filing date (day/month/year) 17 March 2003	(Earliest) Priority Date (day/month/year) 19 April 2002
Applicant METAL STORM LIMITED et al		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 6 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

**Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☒ Unity of invention is lacking (See Box II).

4. With regard to the **title**, ☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**, ☐ the text is approved as submitted by the applicant

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 2

☒ as suggested by the applicant.

☐ None of the figures

☐ because the applicant failed to suggest a figure

☐ because this figure better characterizes the invention

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU03/00318**Box I** Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos :  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos :  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos :  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box II** Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. Claims 1-21 directed to projectile sealing arrangements and projectile assemblies for a plurality of axially disposed abutting projectiles, the projectiles being characterised by the forward portion of a trailing projectile being in operative sealing engagement with a recess in the trailing portion of a leading projectile.
  2. Claims 22-24 directed to a chain of projectiles characterised by a trailing projectile having a head portion for engagement with a complementary recess in the tail portion of a leading projectile such that the projectiles are coupled together in a spigot and socket coupling.
1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
  2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest** ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

**Box III** TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

A projectile sealing arrangement for a barrel assembly of a weapon wherein a plurality of projectile assemblies (10) are axially disposed in abutting relationship within barrel (20), each projectile assembly (10) including body (11) associated with discrete propellant charge (15); said sealing arrangement comprising rearward opening (13) communicating with cavity (14) provided in each projectile assembly (10) for retaining discrete propellant charge (15) and forward portion (16) of an abutting projectile arranged for operative sealing engagement with complementary portion (17) of rearward opening (13). The sealing arrangement includes surface portions of complementary shapes such that, during application of compressive load (L) to abutting projectile assemblies (10), discrete propellant charge (15) is sealed within cavity (14). There is also disclosed and claimed a chain of individual projectiles connected head to tail by complementary spigot and socket members.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU03/00318

**A. CLASSIFICATION OF SUBJECT MATTER**Int. Cl. <sup>7</sup>: F42B 5/16, 14/00, 30/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

AU: IPC F42B 5/02, 5/16, 14/00, 30/00, 39/26

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI: Q79/DC with keywords such as projectile, cavity, propellant, seal, chain, couple and similar terms.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1594686 A (RHEINMETALL GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG) 5 August 1981 Figure 3	1-3, 8, 9, 11-15, 21
X	AU 62790/94 A (O'DWYER) 26 September 1994 Figure 5	1-3, 8, 9, 11-15, 21
X	AU 76309/98 A (O'DWYER) 21 December 1998 Figure 2A	1-3, 8, 9, 11-15, 21



Further documents are listed in the continuation of Box C



See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

9 May 2003

Date of mailing of the international search report

16 MAY 2003

Name and mailing address of the ISA/AU

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU03/00318

C (Continuation).

## DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2099993 A (TAUSCHEK) 23 November 1937 Figure 9	22-24
A	AU 200045232 A (METAL STORM LIMITED) 14 November 2000	
A	AU 200035451 A (METAL STORM LIMITED) 14 November 2000	
A	US 3854231 A (BROYLES) 17 December 1974	

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU03/00318

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
GB	1594686	DE	2723621		
AU	62790/94	AU	23651/97	AU	48863/99
		CA	2157882	CN	1120863
		EP	1069394	HU	72876
		US	5883329	US	6123007
		WO	94/20809	WO	2003023309
AU	76309/98	AU	75148/98	AU	75149/98
		BR	9812999	BR	9813000
		EP	985128	EP	985130
		US	2002152918	US	2002157526
		WO	98/55824	WO	98/55825
AU	200045232	AU	200214774	BR	200011194
		EP	1175589	WO	00/62005
AU	200035451	AU	200227649	BR	200011191
		EP	1175588	US	2003010185
		WO	2003004102		
US	3854231	US	3952658		
END OF ANNEX					